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BEFORE THE
HOUSE SCIENCE AND TECHNOLOGY SUBCOMMITTEE
ON
DOMESTIC AND INTERNATIONAL SCIENTIFIC PLANNING, ANALYSIS, AND COOPERATION
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Mr. Chairman and Members of the Committee:

I appreciate the opportunity to testify before this Subcommittee about the United States Department of Agriculture's commitment to human nutrition research and our priorities in this area.

This new Administration is fully aware of the critical importance of good nutrition to good health. We are also aware that our knowledge from nutrition research is limited and fragmentary.

Secretary Bergland and key members of his staff have stated unequivocally that human nutrition research will be one of our top priorities in new policies and programs that will give people the facts about nutrition. We must develop new insights in this crucial area.

Background. Human nutrition research in the United States began in the 1870's, with the development of agricultural experiment stations. Men such as Atwater and Armsby, who worked at the Connecticut State Agricultural Experiment Station, are recognized today as early pioneers in nutrition research. They and others like them were responsible for much of our early knowledge of human as well as animal nutrition.

Over the years, a partnership in research developed between the USDA and State universities and other institutions. It is this partnership that will play a vital role today in pushing ahead with a human nutrition research effort. It will provide both the university and government researchers and scientists needed to carry on nutrition research. Even more importantly, through the teaching and extension services that have developed over the years, there is a delivery system to get nutrition discoveries to the public -- in a way that will benefit all of our citizens.

As we undertake our future efforts we are going to expand this partnership to include all private groups and public agencies with expertise and commitment to human nutrition research. In this respect it will be essential that the Department work jointly with other Federal agencies.

In fact we have just obtained additional funding for FY 1978 to implement a program of competitive research grants in agricultural and nutrition research.

Current Nutrition Research in USDA

This fiscal year, the Department of Agriculture will spend approximately $24-$25 million on human nutrition research. In addition, cooperating universities are spending approximately $12-$13 million.

Within USDA, research is carried out by three agencies -- the Agricultural Research Service (ARS), the Economic Research Service (ERS), and the Food and Nutrition Service (FNS).

ARS has committed approximately $14 million to human nutrition this year. Research is conducted in three major areas: human nutrition requirements; food composition and improvement; and food consumption and use.

More specifically, researchers study human requirements for lipids, proteins, amino acids, carbohydrates, vitamins, and minerals. Our scientists have developed standard reference tables for the nutrient value of several foods. Studies are undertaken on the nutritional enrichment of foods. Projects are underway to measure food consumption and dietary levels, to develop nutritional guidelines, to evaluate methods to modify food habits, and to develop procedures for food preparation in homes and institutions.

Approximately $700,000 is spent by the Economic Research Service annually on nutrition-related research. ERS studies look at factors influencing consumer choices and consumption, domestic food programs, international and nutritional technical assistance, and food consumption demand and prices.

The Food and Nutrition Service conducts evaluations of the effectiveness of its food assistance programs in delivering nutrition benefits to target populations. The results of these evaluations become the basis for changes in legislation and regulations to strengthen program design and administration.

In addition to inhouse USDA research, state research efforts are strengthened through Federal funds administered by the Cooperative State Research Service (CSRS). Approximately $10-$12 million are allocated for research programs that investigate nutritional requirements, survey dietary status, study the relation of diet to disease, and methods to improve nutrient values, safety of foods, food composition, and related consumer factors.

University research efforts are also aided by approximately another $12 million from the states.

USDA-HEW Coordination of Human Nutrition Research

Other Federal agencies support and conduct nutrition research. These are the Department of Health, Education and Welfare (about $85 million in FY 1977), the Department of Defense, and the Veterans Administration. HEW provides the highest level of funding.

Aiding in the coordination of research at the Federal level is an agreement recently signed between Secretary Bergland and Secretary Califano.

This agreement recognizes that both agencies have major responsibilities in human nutrition and that the responsibilities and the emphasis of the two Departments' research will differ. This agreement sets forth the commitment to develop general areas of responsibility and the commitment to strengthen the communication and cooperation between USDA and HEW.

The results of this agreement are reflected in Title XIII of H.R. 7171. This legislation designates USDA as the lead agency in the Federal Government for agricultural research. This includes nutrition research except in the biomedical areas of nutrition that deal with human health or the prevention, diagnosis, or treatment of disease. It also provides that the Secretary of Agriculture will set up jointly with the Secretary of HEW, procedures to coordinate nutrition research where mutual interests exist.

Both this legislation and the agreement will provide a basis for the two Federal agencies to undertake new human nutrition research programs.

Still further considerations are being given to the roles and functions of Federal agencies for human nutrition research in a study currently underway by the Office of Science and Technology Policy (OSTP).

Future Directions and Priorities

As the Chairman is well aware, there have been nine recent studies that have detailed suggestions for future human nutrition research. Three have been conducted by Congressional committees, two by USDA, and four by the National Academy of Science.

The Select Committee on Nutrition and Human Needs of the Senate called for a human nutrition research program that gives priority to five areas. These are: (1) human nutrient requirements for optimum growth and well-being; (2) nutrient composition of foods and the effects of processing on composition; (3) surveillance of nutritional benefits of USDA food programs; (4) food preferences and habits; and (5) techniques for helping consumers in food selection.

Two subcommittees of the House Committee on Science and Technology conducted a special oversight review of agricultural research. Their report pointed out the inadequacy of current human nutrition research.

Another study conducted by the Working Conference on Research to Meet U.S. and World Food Needs at Kansas City identified 16 human nutrition problems as needing new research. These included nutrient requirements, nutrient composition, food delivery systems, food technology, and food safety.

A follow-up work group evaluated the ongoing research on these 16 problems and recommended an expanded effort.

The studies of the National Academy of Science gave high priority to research on nutrition-performance relations, the role of dietary components, policies affecting nutrition, and nutrition intervention programs.

These studies identify priority needs and outline the urgent problems that should be addressed. These are discussed below.

Nutritional Consequences of Government Policies

To obtain a coherent, comprehensive nutrition policy, we must determine the effects of government policies and programs on nutrition.

This means researching not only how government actions and policies in specific food areas (i.e. food production, processing, and distribution) affect nutrition; but also how government actions and policies in non-food areas (i.e. taxation, income redistribution, and employment, etc.) affect nutrition.

New research in this area can be divided into four categories. These are: (1) the effects on nutrition from food production strategies, agricultural research priorities, agricultural extension work, rural credit services, and food self-sufficiency programs; (2) the effects on nutrition from food and agricultural pricing policies, marketing techniques, delivery systems, international trade and grain reserves; (3) the effects on nutrition because of taxes, income, equal opportunity, environmental protection, and other general government policies, and (4) the effects on the available domestic supplies of food brought about by the interaction of international events and policies.

All of our efforts must take into account the consequences of government policies on children, low income citizens, and the elderly.

Nutrition Intervention Programs

The current research in nutrition intervention is focused primarily on determining factors affecting food choices and preferences. Additional studies are looking into food acceptability based on flavor, texture, and processing, and there have been a limited number of diet assessment studies conducted.

Priority research in the area of nutrition intervention programs include: (1) developing and testing methods for food fortification, food distribution, and nutrition education; (2) determining how such programs can be measured for effectiveness and how their findings can be used in decision-making in nutrition; (3) developing and evaluating information programs to combat food and nutrition misinformation, to inform the public on food safety, and to generally provide nutrition education; (4) carrying out surveys on diet practices to determine which groups in the population are vulnerable to poor nutrition practices; (5) determining how such "diet assessment" surveys can be more effectively developed and implemented; and (6) determining what factors in food choices, preferences, practices, and habits contribute to malnutrition, including high income populations.

More should be done to develop methods to evaluate alternative food intervention programs and to develop testing evaluation-methodologies for food fortification.

Closely related to this area of research is the dissemination of research results to the general public. USDA is acutely aware of the need to do this, and plans are underway in FNS for a $1 million mass media information campaign. This campaign will be a research project in itself to help us determine which communication tools most effectively modify consumer food choices. It will also lay groundwork for future media campaigns to distribute food nutrition information.

I'm certain the Chairman and the Members of this Committee are aware of the commitment that Assistant Secretary Carol Foreman has to this particular project.

Nutrition Performance Relationships

We believe it is vital for everyone to know the relationship of nutrition to physical and mental growth and development, to school and job performance, to pregnancy and lactation, to fertility and family planning. Knowledge gained from this research has immense social consequences.

Our specific research objectives in this area are: (1) determining the difference in nutritional requirements by population groups including differences by sex, age, occupation, and stress; (2) developing criteria for establishing nutritional requirements; and (3) determining human requirements for types and quantities of carbohydrates, and for fiber.

The research conducted by agricultural scientists in this area is to identify nutrient requirements. A large proportion of this is basic work on the biochemical aspects of nutrition. Our future efforts must be directed toward finding the relationship between nutrition and age, sex, occupation, and stress. Greatly increased emphasis is needed on nutritional requirements during different periods of growth, during pregnancy and lactation, and during middle and old age. Particularly in this area efforts will be made to coordinate the research of USDA and HEW.

Role of Dietary Components

The selection of food intervention programs and informed choices by people of the food that they eat depends on basic knowledge of the nutritional composition of foods.

Data are lacking on the amounts of important food nutrients and the availability of nutrient forms that occur in various foods. Much of the current information is obsolete because of the changes in agricultural production, the introduction of new varieties and processing methods, and new storage and transportation facilities.

The research needs are: (1) investigation of the factors affecting the ability of people to utilize nutrients in specific foods, as well as factors affecting the chemical form of the nutrient, its relationship to other nutrients, and the presence of inhibitors; (2) study of the nutrient changes in foods that occur after harvest or slaughter and during processing and distribution; (3) determination of the social and economic feasibility -- and nutrient possibilities -- of new or improved food processes; and (4) conversion of scientific findings from public and private laboratories into readily useful information for consumers, public agencies, and private businesses and organizations.

Studies on changes in nutrient content due to production, processing, and handling practices should be expanded. It is true that research by industry has increased because of food labeling regulations, but only limited groups of foods are included. Because of the multitude of commodities, processes, and practices, there is still need to increase the effort, particularly to develop information that can be used in considering new processes and practices.

The current program on new foods and processes is the largest among all other programs in food and nutrition research conducted by USDA and cooperating universities. Coupled with the input of industry, this covers a wide range of food sources, but primarily from plants. However, higher priority needs to be given to the social and economic feasibility of products.

Minimum funding is available to provide a data bank on nutrient composition of raw, processed, and cooked foods. We must acquire more extensive data on the composition of foods to meet the increasing demands of public and private organizations.

Nutrition in Developing Countries

Much of the research that I have discussed with you this morning has international implications to United States' cooperation and assistance in developing and developed countries throughout the world.

From 500 million to 1 billion people in this world suffer from extreme malnutrition and hunger. The President's commitment to aid these people makes human nutrition research extremely important.

Our research should assist countries whose populations face extreme situations. We must take into account analyses of political and cultural practices. The three principal areas for research are: (1) evaluation of alternative intervention programs based on the dietary needs of specific countries and the interaction of these programs with different political and cultural systems; (2) determination of the nutrition-performance relationships that give strong consideration to the effect of low calorie intakes on physical activity and the effects of low-protein, low-calorie interactions and other nutrient deficiencies on physical and mental growth of children; and (3) an evaluation of the influence of environment and requirements for specific nutrients and diets in developing countries.

There is some research on demonstrating commercial viability of fortified foods in foreign countries and some technical assistance is provided to AID on special foods and delivery systems for different populations.

It has been agricultural research that has developed many of the processed foods that have been distributed by the United States to developing nations. However, we must have the continuing research that will produce the new knowledge necessary to understand and solve the nutrition problems of developing countries.

Conclusion

The specific priority needs I have outlined for human nutrition research require action. Human nutrition problems won't magically fade away. Extraordinary steps are necessary to insure coordinated research efforts, wise expenditures of funds, efficiency, and above all, results.

The United States Department of Agriculture accepts the challenge to utilize the most advanced research planning and management techniques available to strengthen the partnership between the USDA and the State institutions. Furthermore, we are determined to propose and implement new initiatives. We are also committed to coordinating our efforts with other Federal agencies, universities, and institutions outside the traditional USDA-land-grant system.

The benefits to society from a well-funded, well-staffed human nutrition research program are immense. We can help people eat better. We can help people stay healthy. It is realistic that government programs can effectively concentrate on preventive health care, rather than on efforts to cure people after they become sick. It is realistic that people will be able to relate diets to specific needs and thereby markedly improve their productivity and emjoyment of life.

It is also realistic that USDA can broaden its concept of itself and expand its leadership and research capabilities beyond traditional agricultural policies, and into intensified food and nutrition programs.

Dramatic breakthroughs in human nutrition are within our reach, if we meet the priorities that I have set forth.

I will attempt to answer any questions that you have.

Thank you.

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